

**Remarks**

This Application has been carefully reviewed in light of the Office Action mailed September 14, 2004. Applicants elect with traverse to prosecute Group II (Claims 11-20), and have withdrawn Group I (Claims 1-10 and 32), Group III (Claims 21-30), and Group IV (Claim 31) without prejudice or disclaimer. No amendments have been made. Applicants respectfully provide these remarks.

**The Restriction Requirement is Improper**

The Examiner required restriction to one of the following groups:

- I. Claims 1-10 and 32 drawn to a method for deploying parts;
- II. Claims 11-20 drawn to a system for deploying parts;
- III. Claims 21-30 drawn to logic for deploying parts; and
- IV. Claim 31 drawn to a system for deploying parts.

Applicants respectfully traverse the restriction requirement. There are two criteria for a proper requirement for restriction between patentably distinct inventions: (1) the inventions must be independent or distinct as claimed; and (2) there must be a serious burden on the Examiner if restriction is required. M.P.E.P. § 803. Applicants respectfully submit that these two criteria have not been satisfied.

First, the inventions are neither independent nor distinct. The term "independent" means that there is no disclosed relationship between the two or more subjects disclosed, that is, they are unconnected in design, operation, or effect. M.P.E.P. § 802.01. The claims of Groups I, II, III, and IV clearly recite substantially similar limitations. For example, independent Claims 1, 11, 21, and 31 all recite substantially identical operations being performed as steps in a method (Claim 1), executed by software components in a computer-implemented system (Claim 11), executed by logic embodied in a computer-readable medium (Claim 21), or performed by means within a system (Claim 31). Also, the specification discloses relationships among the subjects of Groups I, II, and III. (*See, e.g.*, Page 7, Line 21 – Page 8, Line 9; Page 8, Line 16 – Page 10, Line 19) Thus, the inventions are not independent. The term "distinct" means that two or more subjects as disclosed are related, but are capable of separate manufacture, use, or sale as claimed, and are patentable, that is,

novel and unobvious, over each other. M.P.E.P. § 802.01. The claims of Groups I, II, III, and IV clearly recite substantially similar limitations, as shown above. Applicants respectfully submit that the Examiner would not consider the claims of any of Groups I, II, III, and IV to be novel and unobvious over each other. By analogy, if a prior art reference disclosed the subject matter of Claim 1 of Group I in its entirety, Applicants respectfully submit that the Examiner would not consider Claim 11 of Group II, Claim 21 of Group III, or Claim 31 of Group IV novel and unobvious over that reference. Furthermore, "If there is an express admission that the claimed inventions are obvious over each other within the meaning of 35 U.S.C. 103, restriction should not be required." M.P.E.P. § 803 (citation omitted). Applicants expressly admit that the claims of Groups I, II, III, and IV are obvious over each other.

Second, the search and examination of the application may be made without serious burden on the Examiner since the claims of Groups I, II, III, and IV clearly recite substantially similar limitations, as shown above. "If the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions." M.P.E.P. § 803.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the restriction requirement. Applicants preserve the right to petition the restriction requirement if the restriction requirement is made final.

**The Claims are Allowable over Huang**

The Examiner rejects Claims 11-20 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,151,582 to Huang et al. ("*Huang*") in view of Official Notice assumptions made by the Examiner.

The Examiner's Section 103(a) argument, in its entirety, is reproduced below:

Huang discloses a computer implemented system comprising for deploying part components defining a plurality of locations, lead times, stock levels, a demand, e.g., Figs. 5, 9. Huang does not explicitly disclose a coverage function.

Official Notice is taken that coverage and optimization functions have been common knowledge in the art prior to Applicant's inventive concept. To

have provided optimization and coverage functions for Huang would have been obvious to one of ordinary skill in the art. The motivation for having provided such would have been to deploy the parts in the locations where each is needed via a service level. The remaining dependent claims appear common knowledge operational system computations. Official Notice is taken of such. To have provided such would have been obvious to one of ordinary skill in the art.

(Office Action, Pages 2-3) Applicants respectfully disagree.

**A. Independent Claim 11**

**1. The proposed Huang-Official Notice combination fails to disclose, teach, or suggest limitations recited in independent Claim 11**

The proposed Huang-Official Notice combination fails to disclose, teach, or suggest numerous limitations specifically recited in independent Claim 11. As a first example, Huang fails to disclose, teach, or suggest, as specifically recited in independent Claim 11:

***compute a lead-time demand for each part at each location using the availability lead-times for the part.***

In contrast, Huang discloses determining a ***lead time mean*** and a ***lead time variance*** from ***sales information***. According to Huang, the following equation is used to calculate the lead time mean and lead time variance from sales information:

LD<sub>t</sub> = lead time demand for order placed at beginning of period t. If lead time demand distribution is chosen to be Normal (for example), then set its mean and variance as follows:

$$\begin{aligned}\mu(LD_t) &= \sum_{i=1} \Pr[L=1] \{S_t + S_{t+1} + \dots + S_{t+i}\} \\ \sigma^2(LD_t) &= \sum_{i=1} \Pr[L=1] \{\sigma^2_t + \sigma^2_{t+1} + \dots + \sigma^2_{t+i}\} + \\ &\quad \sum_{i=1} \Pr[L=1] \{S_t + S_{t+1} + \dots + S_{t+i} - \mu^2(LD_t)\}\end{aligned}$$

(Column 61, Lines 50-64) "S" represents Sales. (Column 61, Lines 43-46)

Thus, Huang fails to disclose, teach, or suggest computing ***a lead-time demand for each part at each location using the availability lead-times for the part*** as recited in independent Claim 11.

As a second example, *Huang* fails to disclose, teach, or suggest, as specifically recited in independent Claim 11:

*determine a completely filled demand from the lead-time demands and the stock levels; and*  
*determine a partially filled demand from the lead-time demands and the stock levels.*

*Huang* discloses a variety of demand data, but not a *completely filled demand* or a *partially filled demand*. According to *Huang*:

Demand Characterization—Demand data from various sources such as Demand History Data 136, POS Data 138, Market Data 140, and Promotion Data 142 as well as top-down and bottom-up Forecast Data 146 obtained by buyers and account managers will be consolidated and synthesized by the MDA Module 134 and the SFP Module 132. Bottom-up Demand Forecasting—Demand Review 144 consolidates demand information received directly from the customer along with the input from the MDA Module 134 and then develops Demand Orientation Data 148. The SFP Module 132 will then use Demand Orientation Data 148 as well as other inputs, e.g. Promotion 142 and POS 138 Data, to develop the customer-centric bottom-up forecasts in Forecast Data 146. Top-down Forecasting—The SFP Module 132 will use market and industry-wide trend analysis performed by the MDA Module 134 along with the enterprise's shipment history to generate the product-centric top-down forecasts in Forecast Data 146.

(Column 18, Lines 46-64). *Huang* fails to disclose, teach, or suggest a *completely filled demand* or a *partially filled demand*.

Moreover, *Huang* discloses using the expected value and standard deviation of the lead time demand to obtain certain estimates, but not using *lead-time demands for each part at each location to determine a completely filled demand* or to *determine a partially filled demand*. According to *Huang*:

This section presents two models; the first model describes an algorithm for the calculation of required echelon inventories. (Echelon inventory = inventory in transit from the plant to the DC + inventory on hand at the DC + inventory in transit from the DC to the stores + inventory on hand at the stores.) The second model estimates the expected level of service provided at a certain D.C, given a delivery quantity. Two important parameters used in both models are the expected value and standard deviation of the lead-time demand. These models compute the stock-out probability of today's delivery on the day of its arrival to the stores. This is based on the approximation that was developed as part of prior research on the Multi-Item, Two-Echelon production/inventory systems.

(Column 68, Lines 54-67)

Thus, *Huang* fails to disclose, teach, or suggest, as specifically recited in independent Claim 11:

***determine a completely filled demand from the lead-time demands and the stock levels; and  
determine a partially filled demand from the lead-time demands and the stock levels.***

As a third example, *Huang* fails to disclose, teach, or suggest, as specifically recited in independent Claim 11:

***generate a coverage function for the parts at the locations from the completely filled demand and the partially filled demand.***

As presented above, the Examiner relies on Official Notice as to these limitations. Applicants traverse the Official Notice taken by the Examiner as to the rejection of the claims. "It is never appropriate to rely solely on 'common knowledge' in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based." M.P.E.P. § 2144.03. "Official notice without documentary evidence to support an examiner's conclusion is permissible only in some circumstances. While 'official notice' may be relied on, these circumstances should be rare when an application is under final rejection or action under 37 C.F.R. 1.113. Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. As noted by the court in *In re Ahlert*, 424 F.2d 1088, 1091, 165 U.S.P.Q. 418, 420 (CCPA 1970), the notice of facts beyond the record which may be taken by the examiner must be 'capable of such instant and unquestionable demonstration as to defy dispute'" M.P.E.P. § 2144.03.

Applicants respectfully traverse the Official Notice taken by the Examiner that "coverage and optimization functions have been common knowledge in the art prior to Applicant's inventive concept" and that the "remaining dependent claims appear common knowledge operational system computations." (Office Action, Page 3) Applicants respectfully submit that "coverage and optimization functions" and the "remaining dependent

claims” are neither well-known nor common knowledge in the art capable of instant and unquestionable demonstration as being well-known.

Applicants request that the Examiner produce a reference in support of his position pursuant to M.P.E.P. § 2144.03. “It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known.” M.P.E.P. § 2144.03 (emphasis in original).

Moreover, Applicants respectfully note that to establish a *prima facie* case of obviousness, three basic criteria must be met. One of these requirements is that the prior art reference (or references when combined) ***must teach or suggest all the claim limitations***. M.P.E.P. § 2142 (emphasis added); *see also* M.P.E.P. § 2143.03. “***All words in a claim must be considered*** in judging the patentability of that claim against the prior art.” M.P.E.P. § 2143.03 (emphasis added). Applicants respectfully submit that even if the Examiner’s Official Notice of “coverage and optimization functions” were permissible, which it is not, the existence of “coverage and optimization functions” do not in themselves disclose, teach, or suggest as specifically recited in independent Claim 11:

***generate a coverage function for the parts at the locations from the completely filled demand and the partially filled demand.***

Thus, the proposed *Huang*-Official Notice combination is plainly inadequate to support the rejection of independent Claim 11.

For at least these reasons, Applicants respectfully request reconsideration and allowance of independent Claim 11.

## **2. The proposed *Huang*-Official Notice combination is improper**

Even if it would have been technologically feasible at the time of the invention to combine the teachings of *Huang* and the Official Notice assumptions, which Applicants do not admit, the rejection would still be improper because the Examiner has not shown the required teaching, suggestion, or motivation in *Huang*, in the Official Notice assumptions, or in knowledge generally available to those of ordinary skill in the art at the time of the

invention to combine *Huang* with the Official Notice assumptions in the manner the Examiner proposes. Independent Claim 11 is also allowable for at least this additional reason.

The question raised under 35 U.S.C. § 103 is whether the prior art taken as a whole would suggest the claimed invention taken as a whole to one of ordinary skill in the art at the time of the invention. Accordingly, even if all elements of a claim are disclosed in various prior art references, which is certainly not the case here as discussed above, the claimed invention taken as a whole cannot be said to be obvious without some reason given in the prior art why one of ordinary skill at the time of the invention would have been prompted to modify the teachings of a reference or combine the teachings of multiple references to arrive at the claimed invention.

The M.P.E.P. sets forth the strict legal standard for establishing a *prima facie* case of obviousness based on modification or combination of prior art references. “To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references where combined) must teach or suggest all the claim limitations.” M.P.E.P. § 2142, 2143. The teaching, suggestion, or motivation for the modification or combination and the reasonable expectation of success must both be found in the prior art and cannot be based on an applicant’s disclosure. *See Id.* (citations omitted). “Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art” at the time of the invention. M.P.E.P. § 2143.01. Even the fact that references *can* be modified or combined does not render the resultant modification or combination obvious unless the prior art teaches or suggests the desirability of the modification or combination. *See Id.* (citations omitted). Moreover, “To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or

suggested by the prior art. All words in a claim must be considered in judging the patentability of that claim against the prior art.” M.P.E.P. § 2143.03 (citations omitted).

The governing Federal Circuit case law makes this strict legal standard even more clear.<sup>1</sup> According to the Federal Circuit, “a showing of a suggestion, teaching, or motivation to combine or modify prior art references is an essential component of an obviousness holding.” *In re Sang-Su Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433 (Fed. Cir. 2002) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 U.S.P.Q.2d 1456, 1459 (Fed. Cir. 2000)). “Evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved.” *In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). However, the “range of sources available . . . does not diminish the requirement for actual evidence.” *Id.* Although a prior art device “may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.” *In re Mills*, 916 F.2d at 682, 16 U.S.P.Q.2d at 1432. *See also In re Rouffet*, 149 F.3d 1350, 1357, 47 U.S.P.Q.2d 1453, 1457-58 (Fed. Cir. 1998) (holding a *prima facie* case of obviousness not made where the combination of the references taught every element of the claimed invention but did not provide a motivation to combine); *In Re Jones*, 958 F.2d 347, 351, 21 U.S.P.Q.2d 1941, 1944 (Fed. Cir. 1992) (“Conspicuously missing from this record is any evidence, other than the PTO’s speculation (if that can be called evidence) that one of ordinary skill in the herbicidal art would have been motivated to make the modification of the prior art salts necessary to arrive at” the claimed invention.). Even a determination that it would have been obvious to one of ordinary skill in the art at the time of the invention to try the proposed modification or combination is not sufficient to establish a *prima facie* case of obviousness. *See In re Fine*, 837 F.2d 1071, 1075, 5 U.S.P.Q.2d 1596, 1599 (Fed. Cir. 1988).

In addition, the M.P.E.P. and the Federal Circuit repeatedly warn against using an applicant’s disclosure as a blueprint to reconstruct the claimed invention. For example, the M.P.E.P. states, “The tendency to resort to ‘hindsight’ based upon applicant’s disclosure is

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<sup>1</sup> Note M.P.E.P. 2145 X.C. (“The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.”).



often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.” M.P.E.P. § 2142. The governing Federal Circuit cases are equally clear. “A critical step in analyzing the patentability of claims pursuant to [35 U.S.C. § 103] is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. . . . Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one ‘to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher.’” *In re Kotzab*, 217 F.3d 1365, 1369, 55 U.S.P.Q.2d 1313, 1316 (Fed. Cir. 2000) (citations omitted). In *In re Kotzab*, the Federal Circuit noted that to prevent use of hindsight based on the invention to defeat patentability of the invention, the court requires the Examiner to demonstrate a motivation in the prior art to combine the references that are alleged to create the case of obviousness. *See id.* *See also*, e.g., *Grain Processing Corp. v. American Maize-Products*, 840 F.2d 902, 907, 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988). Similarly, in *In re Dembiczak*, the Federal Circuit reversed a finding of obviousness by the Board, explaining again that the required evidence of such a teaching, suggestion, or motivation is absolutely essential to avoid impermissible hindsight reconstruction of an applicant’s invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999, 50 U.S.P.Q.2d at 1617 (emphasis added) (citations omitted).

Nothing in *Huang*, the Official Notice assumptions, or knowledge generally available to those of ordinary skill in the art at the time of the invention teaches, suggests, or motivates in any way the proposed combination.<sup>2</sup> The Examiner’s speculation that “it would be

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<sup>2</sup> If “common knowledge” or “well known” art is being relied on to supply the required teaching, suggestion, or motivation to combine the references, Applicants respectfully request that a reference be provided in support of

obvious” to one of ordinary skill in the art to combine the teachings of *Huang* and the Official Notice assumptions in order to “deploy the parts in the locations where each is needed via a service level” to achieve Applicants’ invention, in hindsight with the benefit of Applicants’ claims as a roadmap for selecting portions of multiple references, is clearly insufficient under the M.P.E.P. and the governing Federal Circuit case law. The fact remains that the prior art simply fails to provide the requisite teaching, suggestion, or motivation to combine *Huang* and the Official Notice assumptions in the manner the Examiner proposes.

For at least these additional reasons, Applicants respectfully request reconsideration and allowance of independent Claim 11 and its dependent claims.

**B. Dependent Claims 12-20**

Dependent Claims 12-20 are allowable based at least on their dependency on independent Claim 11. Since Applicants believe they have amply demonstrated the allowability of the independent claim over the prior art, and to avoid unnecessarily burdening the record, Applicants have not provided detailed remarks concerning the dependent claims. However, Applicants remain ready to provide such remarks in a future Response or on Appeal, if appropriate. Applicants respectfully request reconsideration and allowance of all dependent claims.

**C. Withdrawn Claims 1-10 and 21-32**

If Claims 1-10 and 21-32 are reinstated, as they should be for the reasons set forth above, the claims are allowable for at least the same reasons as Claim 11 and its dependent claims.

**The Information Disclosure Statement Should be Considered**

An Information Disclosure Statement (IDS) and accompanying PTO-1449 form were submitted on March 22, 2002. The PTO-1449 form lists one 30-page English language document. The Examiner has requested that the Applicants specifically point out particular

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this position pursuant to M.P.E.P. § 2144.03. If personal knowledge is being relied on to supply the required teaching, suggestion, or motivation to combine the references, Applicants respectfully request that an affidavit supporting such facts be provided pursuant to M.P.E.P. 2144.03.

features relevant to the instant invention, as the document is extensive. (Office Action, Page 3)

Applicants believe that the IDS and the PTO-1449 form satisfy the requirements of 37 C.F.R. § 1.97 and 37 C.F.R. § 1.98, and respectfully request that the Examiner consider the information submitted in the IDS. Once the minimum requirements of 37 C.F.R. § 1.97 and 37 C.F.R. § 1.98 are met, the examiner has an obligation to consider the information. M.P.E.P § 609. To attempt to aid the Examiner, Applicants refer in particular to pages 6-18 and 27-30 of the document. However, Applicants encourage the Examiner to review the entire document and make an independent judgment as to its relevance, if any.

**Conclusion**

Applicants believe the Application is in condition for allowance. For at least the foregoing reasons, Applicants respectfully request full allowance of all pending claims.

If the Examiner believes a telephone conference would advance prosecution of this case in any way, the Examiner is invited to contact Christopher W. Kennerly, the Attorney for Applicants, at the Examiner's convenience at (214) 953-6812.

Applicants believe that no fees are due. However, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

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**05073**

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